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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,247	09/15/2003	Derrick Lin	42PI0543C	2876
8791	7590	11/04/2004	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN 12400 WILSHIRE BOULEVARD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			THAI, TUAN V	
			ART UNIT	PAPER NUMBER
			2186	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,247

Applicant(s)

LIN, DERRICK

Examiner

Tuan V. Thai

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 12-14, 16, 17, 19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) 5-11, 15, 18 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 12-14, 16, 17, 19 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/12/2004
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2186

Part III DETAILED ACTION

Specification

1. This application is continuation of application 09/561,145; now patent 6,631,452. Claims 5-11, 15, 18 and 20 have been canceled. Claims 1-4, 12-14, 16-17, 19 and 21 are presented for examination.

2. Applicant is reminded of the duty to fully disclose information under 37 CFR 1.56.

Double Patenting

3. The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman*, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 2186

4. Claims 1-4, 12-14, 16-17, 19 and 21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 13, 15-17 and 19 of U.S. Patent No. 6,631,452. Although the conflicting claims are not identical, they are not patentably distinct from each other because the wording of the instant claims are broader as compared to the limitations of the original claims. The instant claims are slightly broader in their new form. Examples are: Claims 1, 3-4; 2; 12-14; 16; 17; 19 and 21 of the current application are obvious slight variation of claims 1; 3; 13; 15; 16; 17 and 19 respectively of patent 6,631,452. The claims are not patentably distinct from each other because the claims are directed to the same system and method for managing data in a register stack of a computer system having a memory, a register file and a register stack engine for monitoring activity of the memory channel/bus to transfer data responsive to available memory channel bandwidth.

Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that

Art Unit: 2186

the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 12-14, 16-17, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen et al. (USPN: 6,006,318); hereinafter Hansen; in view of Dowling (USPN: 6,128,728).

As per claims 1, 12 and 16; Hansen teaches the invention as claimed including a method for managing data in a computer system comprising multiple memory devices 92 which are accessible by the general purpose media processor 12 (e.g. see figure 6; column 11, lines 43 et seq.); a register file coupled to the memory through a memory channel, the register file to store data for one or more procedures in one or more frames, respectively (e.g. see column 5, lines 34 et seq.). Hansen, with one exception, does not specifically disclose and a register stack engine to monitor activity on the memory channel for available bandwidth on the memory channel/bus and to transfer data between selected frames of the register file. Dowling, in his teaching of virtual shadow registers and virtual register windows, discloses the missing element that is known to be required in the system of Hansen in order to arrive at the Applicant's current invention wherein Dowling discloses the DMA/DRA controller (as being equivalent to the claimed register stack engine) for monitoring the bus

Art Unit: 2186

(channel) activity to determine when unused memory bandwidth is available for moving/transferring the data contents between the shadow registers and memory buffer (e.g. see column 7, lines 43-49). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the current invention was made to employ the teaching of monitoring the activity of memory bus/channel for available bandwidth to transfer data within system units/frames as taught by Dowling for that of Hansen in order to arrive at Applicant's current invention. In doing so, it would (a) maximize the bus utilization to avoid any waste of channel bandwidth in data transfer, and (b) increasing system throughput; therefore being advantageous.

As per claim 2, wherein the memory includes a backing store/portions and the register stack engine transfers data between the selected frames and the backing store is taught by Hansen; for example, Hansen discloses his memory having multiple memory portions and instruction set from memory management unit preferably includes load and store instructions that move data between memory and the register file 110, branch instructions to compare the content of registers and transfer control, and arithmetic operations to perform computations on the contents of registers (e.g. see column 14, lines 59 et seq.; column 15, lines 48 et seq.);

As per claims 3-4 and 13, the further limitation of a

Art Unit: 2186

portion of the register file is organized as a register stack is equivalently taught by Hansen as the 64 general purpose registers along with program counter/pointer contained in the register file 110 are all available to the user/programmer, and comprise a portion of the user state of the general purpose media processor 12, wherein the general purpose registers are preferably capable of storing any form of data (e.g. see column 13, lines 10 et seq.);

As per claim 14, Hansen discloses filling data from the backing store to a current oldest clean register when capacity is available on the memory channel is taught as the concept of data fetching/pre-fetching (e.g. see column 5, line 66 bridging column 6, line 25);

As per claim 17, the further limitation of a load/store unit and the register stack engine monitors the load/store unit to determine available bandwidth to the memory system is taught by Hansen as the instruction set from the management unit preferably includes load and store instructions that move data between memory and the register file 110, branch instructions to compare the content of registers and transfer control, and arithmetic operations to perform computations on the contents of registers (e.g. see column 15, lines 48 et seq.);

As per claims 19 and 21, the register stack engine transfers data for inactive procedures responsive to a mode status

Art Unit: 2186

indicator which is set under software control responsive to a type of application to run on the computer system is taught by Hansen to the extent that it is being claimed; for example, Hansen discloses when the communication channel 156 is inactive or idle, such as during initialization and between transmitted packets, an idle packet, consisting of an all-zero byte and an all-one byte is transmitted through the communication channel 156 wherein software is employed to adaptively adjust the skew in the channel 156 through digital skew fields (e.g. see column 22, lines 30 et seq. and column 20, lines 41 et seq.);

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

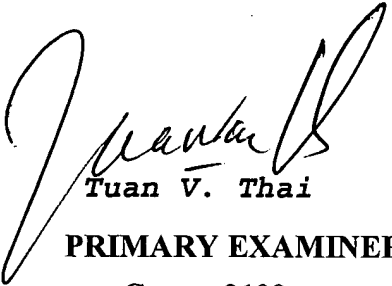
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan V. Thai whose telephone number is (571)-272-4187. The examiner can normally be reached from 6:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew M. Kim can be reached on (571)-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application

Art Unit: 2186

may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVT/October 22, 2004



Tuan V. Thai
PRIMARY EXAMINER
Group 2100